

**LI.S.T. Group**LONG ISLAND  
SINCLAIR TIMEX  
GROUP

Centerport, N.Y. 11721

TO:

Dear Inquirers:

The LIST GROUP is being formed to help keep the spirit of the Sinclair-Timex "peoples" computer alive. At this point, we're simply getting organized; trying to recruit members, exchanging names, etc. A Charter is yet to be written and "meetings" are mostly by phone or correspondence.

Despite the lack of a written charter, I think the general goals of our group will include:

- 1) Exchange of information, ideas and knowledge on and about TS computers.
- 2) Hardware and Software demonstration and perhaps even exchange.
- 3) Community service to increase computer literacy.
- 4) Perhaps some advantage to members through the exercise of group buying power.

Right now we have few members and a 0 budget. I plan to develop some sort of newsletter, bulked out, perhaps, with some of my product reviews and items from other users groups. To begin with, let's just say an SASE sent to me will keep these newsletters coming to you. In all likelihood, however, we'll probably have to start some sort of 'kitty' to cover such things as phone bills, Xerox costs, space rental (janitorial fees) and a P.O. box. With your next SASE, why not suggest a membership or annual fee and what you think it should be used for. Once we get enough members, or at some arbitrary time when I can arrange it, we'll try to set up a meeting.

If you have been in a user group before or have suggestions on such things as meeting spots, newsletter format, bylaws etc., please help as with your ideas and/or experience.

Hope to hear from you soon,

P.J. Donnelly

*Paul D.*

# HARDWARE REVIEW

ITEM: ROMPAK  
USE: INSTANT LOAD SOFTWARE  
FOR: 8K/7K RAM  
FROM: ROMPAK, INC.  
SUITE 100, 8206 BLACKBURN AVENUE  
LOS ANGELES, CA 90048  
PRICE: \$9.95 KIT, \$16.95 A & T WITH ZIP + \$2.00 P&H

At \$9.95 I just couldn't resist ROMPAK's basic cartridge kit for 4 and 8K EPROMs. The thought of instant loading software was just too much. Of course, the ROMPAK is of little use on its own, so I also broke down and bought the \$9.95 Galactic PAK test game.

The ROMPAK is a small (3" X 3") open, double-sided printed circuit board which plugs onto your ZX/TS expansion bus. A male bus extension protrudes out the back, so you can attach more peripherals (like a RAM Pack). The board is uncased and in this stripped version has a transistor for control of ROMCS, an LS138 selector for decoding, and a socket for 24 pin or 28 pin EPROMs. The more advanced version has a Zero Insertion Force (ZIF) socket which is probably a must if you plan to use more than one PAK. (ZIF sockets have a special mechanical construction, using a lever, which eliminates the wiggling and pin bending problems, which often accompany I.C. removal/insertion). No extra power supply is needed. You must use a 16K ram pack with ROMPAK, as the programs are apparently booted up into the BASIC area for execution. You do this with a RND USR command and are instantly into the software. One minor inconvenience, in the case of Galactic PAK, was that once booted to BASIC, the program can't be SAVED. It's easy enough to get around this (an LDIR to and from a long IREM statement), but for those who like to experiment, a bit of a hassle.

ROMPAK's decoding scheme is a little strange, allowing easy use of the 8-16K area (A<sub>13</sub> high pulls RAMCS high through a transistor), but not such easy use of other 8K blocks. This was apparently done to simplify trace layout, but makes it somewhat inconvenient to use. In any event, I don't recommend trying to map into other areas without a complete schematic. The instructions with ROMPAK indicate you can use other 8K blocks, and jumper pads are even supplied. But, no provision is made for ROMCS when other blocks are used (e.g., it's a simple task to install your own system ROM in the 0-8 block. With the decoding of ROMCS as is, however, both your ROM and the Sinclair ROM would be enabled at the same time unless you further decode the 138's output).

My "kit" came already assembled and for \$9.95 I give the ROMPAK a 9 out of 10, based on price. Compared to TIMEX's 1510 module, ROMPAK lacks some features (e.g., RESET button and attractive case) but, the ease of access to the address lines helps to make up for this. I see ROMPAK as a very viable low cost EPROM holder for dedicated tasks. An example would be for a Solar Hot Water control station. You could design your system control using say a Byte Back 88-1 module, ROMPAK and 16K RAM (possibly even just the 2K). A RAND USR would be all you'd need to get it up and running - No tapes or recorder wires to worry about; even the TV set could be dispensed with if you had an LED to show that the software booted OK. Such a software system could be developed on a Hunter Board, for example, and then transferred to EPROM. *With Apple II and 128K in Nov 83*

While I didn't think much of the Galactic PAK software (a very simple "move through space" game), the ROMPAK hardware is simple, elegant and inexpensive and represents a good buy for the hardware experimenter.

# HARDWARE REVIEW

ITEM: 1510 COMMAND CARTRIDGE PLAYER  
USE: INSTANT LOAD SOFTWARE  
FOR: 8K ROM/16K RAM  
FROM: TIMEX CORP.  
WATERBURY, CONN. 06725  
PRICE: \$19.95 + P&H (\$2.50)

The prices of the promised software for the 1510 are only slightly higher than their tape counterparts, so spending \$20 for the convenience of instant loading seems a small price to pay. Of course, as usual, it's been over two months since I ordered software and while I received the player quickly, my cartridge arrived only yesterday. What can you do with just the player, I thought? First, lets have a look at the hardware.

The TS 1510 is a small (3" square by 2 1/2" high) silver plastic box, color matched to the 2068 (on which it probably will not work). A female edge connector mates to the back of your TS or other peripherals and an expansion bus extends out the rear for your 16K RAM. 36 contact cartridges are inserted from the top into another slotted card edge connector. The unit needs no auxiliary power service, and you must have 16K to use it with a cartridge.

Under the hood of the 1510 is a double-sided Printed Circuit Board with plated through holes (DSPT). Components include chip-select logic consisting of a 74LS02, quad NOR, 74LS00, quad NAND, some despiking and filter capacitors, and a simple pull up resistor and diode OR (sometimes called Mickey House logic) for ROMCS. (Preliminary schematic attached). Do look over the schematic carefully before you use the 1510 with non-TIMEX peripherals, as the decoding is not quite complete (i.e., there is nothing above 32K, right?). Also inside the 1510, mounted just under the front female edge connector, is a small strip of spring steel supported by a foam rubber pad. This little add-on greatly increases stability and virtually eliminates "RAM PACK WOBBLE" type problems for the 1510. The inside of the case is spray metallized to reduce RFI. Since the socket connector pins are only about 3/32" above that metal coating, I'm a little worried about pushing down too hard on a cartridge and causing a problem. But, as power is supposed to be off when you do this, it should not materialize for most.

A word of caution though, on the back (male) edge connector, the solution to "wobble" was apparently to make the slot extra tight. Mine was too tight, it pulled the key out of my RAMPAK, and broke some plastic out as well. I almost lost the RAM pack the next time I used it, as the key was missing.

Besides increased stability, the 1510 has two other features that may make it a good buy, for many, even without cartridges. These are: 1) A RESET switch. You can simply leave the 1510 hooked up all the time and obtain a warrantee saving, simple-to-use, RESET function. 2) Bus extension. Any number of peripherals have components sticking out which prevent direct mounting on the back of the TIMEX. Bus extenders cost from \$12 to \$20 and in many cases could be replaced by the 1510.

I had been using my 1510 as a RESET box only until I received my first software cartridge, PSION's FLIGHT SIMULATOR. I'm sure that program has been reviewed elsewhere so we'll cover just five points of using the cartridges.

The Timex cartridges come attractively packaged in a card box and are about 2 1/2" square and only 3/8" thick. They can only be inserted one way and take a considerable amount of force to insert. The gold edged contacts are protected while not inserted in the player by a self retracting plastic sleeve. Interestingly, instructions for the 1510 only were supplied with the cartridge. They indicate that it will come up running on that machine. On TS 1000's, you must execute a RND USR 8192 to a ML routine in the cartridge's EPROM. That, in turn, boots the ML and BASIC program up into the 16-32K area for execution. You can modify the program and even "SAVE" it then, from BASIC. Do note that you could disassemble TIMEX's transfer routine and use it with, say, a Hunter Board to produce your own "instant" software. However, only an 8K or less programs (not including variables) can be stored and transferred.

The 1510 is a good value for the money (a 9 out of 10 on my scale) even as a stand alone peripheral and seems to be an excellent and economical way to use software. Let's hope Timex reproduces all their titles on cartridge.

## BULLETIN - 2-84

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L.I.S.T. Group

ITEM: GAME CHANGER INTERFACE  
 PURPOSE: CHANGE ATARI GAMES  
 SYSTEM: 8K ROM/2K RAM & ATARI 2600  
 FROM: HURON VALLEY RESEARCH INC.  
 PO BOX 732  
 HIGHLAND, MICHIGAN 48031  
 PRICE: \$125.00 + \$5.00 S&H

Clever hardware construction, both mechanical and electronic, and a solid comprehension of both 6502 (the ATARI 2600's CPU) and Z80 (TIMEX) programming are combined to produce the very powerful "Game Changer Interface". The unit cross-connects your 2600 VCS (Video Computer System) and TS 1000, allowing either one to take control of whole blocks of shared memory. That "shared" memory includes the ROM inside any ATARI game cartridge and "shadow" copies of that ROM in your TS 1000's RAM. With this system you can download the ROM game to your ZX/TS, disassemble the machine code (6502), make games variations or even create your own game from scratch, and then upload your version back to the 2600 for play.

The system consists of two double-sided, plated-through open boards, professionally constructed. The larger, or mother, board plugs into the back of your unexpanded ZX/TS and connects via ribbon cable to the smaller VCS adaptor board. This latter has male and female edge connectors. One inserts into the cartridge slot in your VCS, while game cartridges can be installed in the other.

The mother-board contains 4 HM 6116's (2K Static RAM), and uses some ingenious coding to remap internal RAM above that 8K, for a total of 10K RAM (12K with an extra chip and some soldering). The 4K above RANTOP contain the actual ROM of the game cartridge. For any size cartridge, the game information is transferred to a long 8 REM statement for storage. Cartridges over 4K are handled using a bank switching technique like ATARI's. Game execution is accomplished by transferring the game data to the actual bottom of RAM using menu driven software and then placing the TS 1000 in a bus requested mode when power is applied to the 2600.

The smaller cartridge adapter board uses the strength of the fiberglass board to open the VCS and cartridge door slots, and has an on-off switch to allow insertion and removal of cartridges while the system is on.

Menu driven software is supplied on cassette. It includes 2 programs of BASIC and ML which are required to download the cartridges, one for 2-4K games and one for 8K. The 8K game actually works for any size game, but takes longer to SAVE and LOAD, a bother if your actual cartridge is a short one. The third program is called "Change" and that's exactly what it does. A simple 6502 disassembler and monitor are included in this program. They allow you to review the code and change it at will. This is a very nice feature for those shoot-em-up games where you wish you had "just one more ship".

The system works very well and even comes with high quality RF cables and 3 way switch box for your TV set. You need that switch box, unless you use two sets, to switch back and forth between what your VCS and TS are putting out on channel 3 (or 2). I installed an extra 2K RAM chip as insurance for my disk drives data transfer buffer and found the system 100% compatible with AERCO's disk drive. With that system combination I can download, save or retrieve any program in seconds. The question of speed though, does lead us to the few negative aspects of the system.

8K cartridges download into what, in effect, are 10K BASIC programs, and we all know how long they take to load from tape. After you modify, or make your new game, you may want to have an EPROM burned. Also, as the system uses BUSREQ you'll have trouble using the dynamic RAM's (e.g., as in a 16K RAMPACK) in other system expansions. Hunter's board, populated with 6116's, should work, if your decoding is complete.

I had very little trouble loading the programs. The menus are simple and the documentation is spartan. That documentation consists of 7 photocopied typewritten sheets. It includes an installation sketch and hand drawn schematic, essential memory map locations and operating instructions. Perhaps the only flaw in an otherwise superb system, the documentation is brief, and has a number of typos, though none are serious.

Huron Valley promises to dress up the paperwork to match the quality of the rest of their system and to produce a "Tutorial" (sic) newsletter for owners. Adapters to allow use of the system on 1500's and 2068's are also in the works. Overall, while less than perfect documentation usually causes a severe downgrade, I must rate the "Game Changer" highly. It is exceptionally powerful and well designed, and could provide the ultimate in inexpensive game play and design system for a total investment of less than \$175 (including a TS 1000). Overall rating is a 9 out of 10 and would be higher at a slightly lower price.

One final note about Huron Valley, they are exceptionally helpful and courteous on the phone (the owner's home phone number is supplied), and must be rated one of the supportive vendors I've met.

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 P.J. Donnelly

ITEM: DK TRONICS KEYBOARD  
 FROM: DK TRONICS, SUFFERN - WALDEN, ENGLAND (799-26350)  
 PRICE: \$72.00 + S&H (Depends on exchange rate)

About a month after my second order (the first bounced because of some problems with VISA), I received my DK Tronics "big" keyboard for my TS/1000.

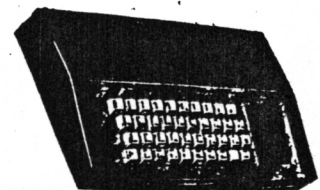
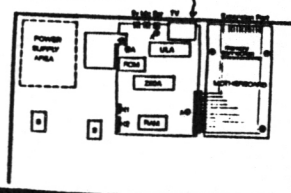
The keyboard case is made of a soft black plastic and has 40 grey keys and an additional 12 red keypad keys. The feel of the keys is good and clear vinyl markers on each key contain the standard Sinclair codes, as used in the U.K. (e.g., NEWLINE for ENTER). Inside the case is DK's "motherboard" which is simply an extension of the ZX81 buss to the rear of the case, but which has an extra male connector sticking up. This extra connector allows you to securely mount any one peripheral inside the case. The usual choice, and mine, is to install a 16K memory pack in this area. This leaves the newly exposed rear connector available for other devices. DK also provides enough room for a small internal power supply for graphics ROM assembly. The standard phone plug connectors are exposed through a slot in the back of the case.

Assembling the DK Tronics keyboard was easy-for the most part. Standard installation requires only that the DK keyboard and ZX81 have the screws holding them together removed and the ZX81 P.C. board placed inside the keyboard case. The ZX board plugs in to the motherboard via the edge connector. Two specially prepared connectors then simply plug into the keyboard slots. There is one problem with the standard installation however. The DK product is intended for use with a UHF modulator. These come out of the case about 1 1/2" further from the back than the USA's VHF output and an extra 1/2" hole has to be drilled in the case. This is not a problem, as the material is very soft and easier to work than wood.

The workmanship on the board I received was not very good. I had to realign the motherboard and found some of the wooden mounting blocks somewhat off enter, as well. Also, DK made no provision for the Ch2 - Ch3 switch in the bottom of the case. Finally, an obvious mold flaw mars the finish on top of my unit.

Other shortcomings include the lack of a space bar, the use of a wooden bottom plate and the total lack of shielding (not required in the UK, I'd guess). These shortcomings are offset somewhat by the fine "feel" of the keyboard, the ease with which the plastic material can be worked, the reasonable price and the extra numeric keyboard. On balance, I would rate the DK's keyboard a reasonable value for the money, but recommend you be prepared to use simple hand tools (screwdriver, hand brace, pliers) to "finish" your keyboard. I expect a warranty claim would be tough to follow up. Do ask for the Overseas price, not the U.K. domestic price.

Drill for US TV



#### LATE BREAKING RUMORS

Word has it that TIMEX had cash flow PROBLEMS. They may be looking to Sinclair for a bailout. If that happens, or another White Knight comes along, there's a good chance our machines will still have professional support.

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